

Remarks/Arguments

In the Non-final Office Action mailed on 27 July 2006, the Examiner rejected claims 9-10 and 12 under 35 U.S.C. §102(b) as being anticipated by Nair (U.S. Patent Publication No. 2002/0084817). The Examiner rejected claims 14-16 under 35 U.S.C. §102(e) as anticipated by Kim (U.S. Patent Publication No. 2002/0118037). The Examiner rejected claim 13 under 35 U.S.C. §103(e) as being unpatentable over Nair in view of Hossain (U.S. Patent Publication No. 2002/0135406). The Examiner objected to claims 1, 14 and 17 due to informalities. The Examiner objected to claim 11 as being dependent upon a rejected base claim, but stated it would be allowable if rewritten in independent form. The Examiner stated that claims 1-8 and 17-20 are allowable.

Applicants have amended claims 1, 14 and 17 to overcome the Examiner's objections. Applicants have incorporated the limitations of claims 10 and 11 into independent claim 9, and have cancelled claims 10 and 11. Applicants respectfully traverse the Examiner's rejections, and respectfully request reconsideration and withdrawal of the objections and rejections.

Claim Objections

The Examiner objected to claims 1, 14 and 17 due to informalities. The Examiner objected to claim 11 as being dependent on a rejected base claim.

The Examiner objected to claim 1 as reciting "dynamic switchable termination" and "termination impedance" without sufficient antecedent basis for these limitations. Applicants have amended claim 1 to recite "a dynamic switchable termination" and "a termination impedance."

The Examiner objected to claim 14 as reciting "the device", "dynamic switchable termination" and "termination impedance" without sufficient antecedent basis for these limitations. Applicants have amended claim 14 to recite "a device", "a dynamic switchable termination" and "a termination impedance."

The Examiner objected to claim 17 as reciting "termination impedance" without sufficient antecedent basis for this limitation. Applicants have amended claim 17 to recite "a termination impedance."

The Examiner objected to claim 11 as being dependent upon a rejected base claim, but stated it would be allowable if rewritten in independent form. Applicants have amended claim 9 to incorporate the essential limitations of claim 11 as well as the essential limitations of intervening claim 10. Applicants have cancelled claims 10 and 11. Applicants submit that claim 9 is now allowable as incorporating the essential limitations of allowable claim 11 (now cancelled) and intervening claim 10 (now cancelled).

Applicants respectfully request reconsideration and withdrawal of the outstanding objections.

35 U.S.C. §102 Rejection of Claims 9-10 and 12

The Examiner rejected claims 9-10 and 12 under 35 U.S.C. §102(b) as being anticipated by Nair. The Examiner further stated that claim 11 would be allowable if rewritten in independent form to include all of the limitations of the intervening claims. Applicants have amended the essential limitations of allowable claim 11, as well as the essential limitations of intervening claim 10 into independent claim 9 to overcome the Examiner's 35 U.S.C. §102(b) rejection. Applicants submit that claim 9 is now allowable as incorporating the essential limitations of allowable claim 11 (now cancelled) and intervening claim 10 (now cancelled). Applicants have cancelled claims 10 and 11.

Applicants respectfully request reconsideration and withdrawal of the outstanding rejection of claims 9 and 12. Additionally, dependent claim 12 recites additional limitations not disclosed by Nair.

35 U.S.C. §103 Rejection of Claim 13

The Examiner rejected claim 13 under 35 U.S.C. §103(a) as being unpatentable over Nair in view of Hossain. As discussed above, Applicants have amended claim 9 to include the limitations of allowable dependent claim 11. Claim 13 now depends on

allowable independent claim 9, and is thus allowable at least as depending from an allowable base claim.

Applicants respectfully request reconsideration and withdrawal of the outstanding rejection of claim 13.

35 U.S.C. §102 Rejection of Claims 14-16

The Examiner rejected claims 14-16 under 35 U.S.C. §102(e) as anticipated by Kim. Applicants respectfully traverse the rejection of claims 14-16. The rejection will be discussed in terms of independent claim 14.

Claim 14 recites an I/O cell. The I/O cell comprises a bidirectional signal pad configured for receiving a first signal from a device coupled to the bidirectional signal pad and for transferring a second signal to the device. The I/O cell further comprises a controller for determining when the first signal is to be received by the bidirectional signal pad, and for determining when the second signal is to be transferred by the bidirectional signal pad. The I/O cell further comprises a dynamic switchable termination switchably coupled to the bidirectional signal pad and coupled to the controller. The dynamic switchable termination is configured for providing a termination impedance when the I/O cell is receiving the first signal. The termination impedance comprises process, voltage, and temperature compensated resistance. The dynamic switchable termination is switched by the controller to apply the termination impedance to the bidirectional signal pad when the first signal is to be received by the bidirectional signal pad. The dynamic switchable termination is switched by the controller to not apply the termination impedance to the bidirectional signal pad when the second signal is to be transferred by the bidirectional signal pad. Thus, the termination impedance is switched on or off depending on whether the I/O signal pad is in a receiving or transmitting mode.

Kim does not disclose an I/O cell comprising a bidirectional signal pad. Further, Kim does not disclose a dynamic termination impedance which is switchable to apply a termination impedance to the bidirectional signal pad when the first signal is to be received by the bidirectional signal pad, and to not apply the termination impedance to the bidirectional signal pad when the second signal is to be transferred by the

bidirectional signal pad. Thus, the termination impedance disclosed by Kim is not switched on or off depending on whether the I/O signal pad is in a receiving or transmitting mode.

Further, Kim does not disclose a controller for determining when the first signal is to be received by the bidirectional signal pad, and for determining when the second signal is to be transferred by the bidirectional signal pad. Applicants have amended claim 14 to incorporate the essential limitations of claim 15 into claim 14, i.e., a controller for determining when the signal to be received from the signal pad. The Examiner rejected claim 15 (whose elements are now incorporated in claim 14) as disclosed by Kim. Specifically, the Examiner cited controller 80 of Kim, as well as FIG. 6, FIG. 8 and paragraphs 41-48 of Kim as disclosing a controller for determining when the signal to be received from the signal pad. However, the controller of Kim does not determine when a first signal is to be received from the signal pad. Further, the controller of Kim does not determine when the second signal is to be transmitted by the signal pad. Rather, the controller 80 of Kim comprises two latches, 61 and 63 respectively (paragraph 44 of Kim). The two latches receive updated impedance information (e.g., the proper values of the impedance information). When the impedance of the up-impedance and down-impedance is to be changed, the impedance information stored in the latches is transmitted to the up-termination 31 or the down-termination 33 in accordance with the input pattern, thereby updating the impedance. Such impedance information does not designate whether a signal to be received or transmitted by the signal pad, as the signal pad disclosed by Kim is not bidirectional. Thus, for the reasons stated above, Kim does not disclose the I/O cell as recited by amended claim 14.

Applicants have amended claim 16 to depend from claim 14. Claim 15 has been canceled. Applicants respectfully request reconsideration and withdrawal of the outstanding rejection of claims 14 and 16. Additionally, dependent claim 16 recites additional limitations not disclosed by Kim.

Conclusion

Applicants have amended claims 1, 14 and 17 to overcome the Examiner's objections. Applicants have amended claim 9 to include the essential limitations of allowable claim 11, and intervening claim 10. Applicants have cancelled claims 10 and 11. Applicants have amended claim 14 to better protect the invention. Applicants have cancelled claim 15, and have amended claim 16 to depend from claim 14. Applicants have amended the specification to amend a typographical error. Applicants have addressed each issue raised by the Examiner and respectfully request reconsideration and withdrawal of all outstanding rejections and objections and passage of the application to allowance and issue.

Applicants believe no fees are due in this matter. Should any issues remain, the Examiner is encouraged to telephone the undersigned attorney.

Respectfully submitted,



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